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A STUDY ON CONSUMER'S KNOWLEDGE AND WILLINGNESS TO PAY FOR ORGANIC FOOD PRODUCTS (IN PONDICHERRY REGION)

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Abstract—*Global and Indian organic food consumption has increased enormously over the past few years as a result of increase in health and environmental consciousness among consumers. Though there is an increase in consumption level, the domestic level of consumption and the people who buy organics on a regular basis is very low. The primary reason cited for this is insufficient knowledge about the differences and quality of organics from conventional products. In view of the fact that organic products are expensive consumers are hesitating to buy such products, since Indian consumers are quite price sensitive. Therefore, this study focuses on consumer's knowledge, behavior and their willingness to pay premium for organic food. Samples of 120 organic consumers were surveyed. They are either regular or occasional consumers. Data was collected through questionnaire and was analyzed using percentage analysis, T test and ANOVA. It was found that only few consumers have better knowledge on organic food and education, occupation and income plays a vital role in consumer behavior on the decision of organic food purchase.*

Keywords—*Behaviour, Knowledge, Organic Consumers, Organic Foods, Willingness to Pay.*

INTRODUCTION

There is a change in the pattern of food consumption among consumers across the world as an outcome of increase in health concerns, environmental protection and high awareness about the synthetic pesticides used in the production of food products. Consumers are more concerned about the food they intake and they wish to have more nutritious food which is produced without any chemicals. Consumers are informed about the hazards of pesticides and chemicals to the nature and also to their own health. Chemicals and pesticides used in the food cause severe health damages to human being starting from a small head ache it leads to the brutal diseases like cancer which causes death. Also, it exploits the agricultural land.

As a result of this consumers started looking for organic foods which is produced completely in a natural way without adding any chemicals and pesticides. Since it is produced in such a way it holds many benefits to human beings. It is more nutritious, contains high levels of minerals, vitamins, anti-oxidants and contains less saturated fat. This made consumers to buy organic foods and later the demand for organic foods started increasing.

Various definition of the term organic and organic agriculture

USDA defines it as a "production system which avoids or largely excludes the use of synthetically compounded fertilizers, pesticides, growth regulators and livestock feed additives. To the maximum extent feasible, organic farming systems rely on green manures, off-farm organic wastes and aspects of biological pest control to maintain soil productivity and to supply plant nutrients and control insects, weeds and other pests".

According to Medical dictionary "Organic food is a broadly defined category of food which in the purest form is grown without chemical, fertilizers or pesticides and sold to the consumer without adding preservatives and synthetic food enhancers".

Global and Indian Organic food market - An overview

Being the leading economy in the world, the U.S. market offers substantial opportunities for improvement of the organic food industry. Increased health consciousness among people, food safety, environmental protection, and increase in the

usage of organic and natural products is some of the major reasons for the growth of this market. The other major reason for the growth of this sector is Government funding and private limited company's association with organic food market (Transparency market research).

The global organic food market is expected to grow from US$ 57.5 billion in 2010 to US$ 104.7 billion in 2015 at projected CAGR of 12.9%. Countries like North America is expected to grow at a CAGR of 12% from 2010 to 2015 and Europe has the largest market share with revenue of $28 billion. The Rest of the World which includes Latin America, Australia, and others is expected to grow at the highest CAGR of 16.5 %. The global organic food market is rising due to growing concerns for improving overall health, rising consumer awareness about benefits of organic food, increased organic farming in the world (Transparency market research).

Organic food market in India is escalating at astounding rate of 400 per cent every year according to a report published by Confederation of Indian Industry (CII). The Indian economy still depends on agriculture which contributes 14% to the country's GDP where nearly 60% of population is dependent on agriculture but the farmers are still unable to identify the full potential of the naturally grown crops (Market research, 2013). The market is quickly growing in countries like India and China because the concept of organic food is gaining extensive acceptability among the consumers. Drastic increase in awareness regarding organically grown products which is free from pesticides can be featured for the growth of organic food product of India (APEDA Agri Exchange).

LITERATURE REVIEW

Studies on the choice of consumers towards organic food and growing demand for organically grown products are increasingly seek the attention of academics. In the greater part of researches, majority of the consumers signify that they have a concern and preference towards organic food products (Wandel and Bugge, 1997; Wilkins and Hillers, 1994). Even though the term "organic food" appears to be very familiar to most of the consumers (Roddy et al., 1996), the percentage of consumers who buy organic foods on a usual basis is very small (Wandel and Bugge, 1997; Fotopoulos and Krystallis, 2002). Increase in consumers' interest in organic food has been credited among others to the growing demand for food free from pesticides and chemical residues (Baltas, 2001; Fotopoulos and Krystallis, 2002). Organic products are acquired by processes environmental friendly, by cultivation techniques that consider both the attributes of the final product and the production methods (Chinnici et al., 2002). Thus, increasing demand for organic food is expected to continue in the future.

Previous studies reveal that demographic profiles of consumers significantly influence consumers purchase behavior of organic food (Lea & Worsley 2005; Tsakiridou et al. 2008). The socio-demographic profile influences the attitudes of consumer and their behavior towards buying organic food. These attitudes are mostly influenced by gender, age, income and education level (Magnusson et al., 2001; Tsakiridou et al, 2007).

Particularly the buyers of organic food are likely to be young and female (Onyango, 2007). Larger percentage of women tend to be more concerned in organics, hold more positive attitudes and they are the regular buyers of organic food than men (Lea and Worsley, 2005, Lockie et al. 2004). Some authors have identified that age has an important relationship with the consumption of organic food and the attitudes and motives are it is positively associated with it (Denver et al., 2007; Yue et al., 2008).

When it comes to education it has two different findings from the previous authors. Consumers of organic food are tending to be more educated when compared with non-buyers of organic food are likely to be highly educated (Lockie et al., 2002). Also, they express more optimistic attitudes and they are willing to pay more (Wier et al., 2003).

On the other hand, organic food claims to have positive association with income (von Alvensleben, 1998). Particularly higher income group consumers buy more organic food and they tend to hold more positive approach (Magnusson et al., 2001). Past experience with the consumption of organic food positively influences the attitude towards organics (Roddy et al., 1996).

"Product label helps the buyer to evaluate product quality by converting credence characteristics into search attributes". Yiridoe et al, 2005 acknowledged that two factors influence knowledge of consumers when it comes to purchase of organic food products. First reason is the very low knowledge of consumers with respect to the labels of organic products, which in turn makes consumers to decide not to purchase organic food products. Second reason is that consumers are not able to distinguish the unique features of organic food products when compared with the non-organic products. Thus, with all these literatures reviewed the objectives framed for the study are as follows.

- To analyze the various demographic factors influencing consumer's knowledge towards organic food products in Pondicherry
- To analyze the various demographic factors influencing consumer's organic buying behavior
- To identify consumer's willingness to pay for organic food products.

HYPOTHESIS TESTED

H_1: Demographic variables have no influence on consumer's knowledge regarding organic food products
H_2: Demographic variables have no influence on consumers buying behavior
H_3: There is no significant difference in consumer's willingness to pay for organic food products.

RESEARCH METHODOLOGY

The primary data for the study was collected with the help of a structured questionnaire from 120 organic consumers in Pondicherry region. Purposive sampling has been followed. Since the focus groups are organic consumers the data were purposively collected from the people who use or have used organic food products. A sample of 120 was collected.

Demographic variables taken for the study are Gender, age, education, income occupation and marital status of the consumers. The metric variables taken were knowledge and buying behaviour. The organic consumer's knowledge was tested with the help of mean values and the buying behaviour towards organic food was tested with the help of T test and ANOVA.

Table - I
Demographic profile of the respondents

Demographics		*No. of respondents (%)*
Gender	Male	53
	Female	47
Age	below 20 yrs	2
	21 to 30 yrs	48
	31 to 40 yrs	32
	41 to 50 yrs	17
	51 to 60 yrs	1
Educational Qualification	Schooling	4
	Graduate	35
	Post graduate	56
	Others	5
Income	< 10,000	10
	10,000- 20,000	30
	20,000-30,000	23
	30,000-40,000	13
	40,000-50,000	13
	>50,0000	11
Occupation	Govt. employee	34
	Private employee	19
	Professional	19
	Business	10
	Others	18
Marital status	Married	60
	Unmarried	40
Place of organic food purchase	Farmers	12
	Local markets	46
	Health stores	10
	Organic stores	27
	Supermarkets	42

Table I explains the general background of the consumer's surveyed for the study. It is inferred that that most of the organic consumers surveyed are male and belongs to the age group of 21-30 followed by 31- 40 years. 30% of the respondent's falls under the income group of 10,000- 20,000. Only 11 % are in the income group of above 50,000. Around 46% of consumers buy organic food from local markets followed by supermarkets and organic stores. Only few consumers directly purchase from farmers.

Table - II
Knowledge of organically grown produces

Characteristic	*Mean*	*Std. Deviation*	*Rank*
Chemical free	**3.85**	**1.071**	**3**
Rich nutrients	**4.11**	**.875**	**2**
Guaranteed due to label	3.60	.830	5
Environment friendly	**4.45**	**4.793**	**1**
Free from preservatives	3.84	.941	4

The given table II explains the attributes taken for the knowledge of consumers regarding organic food. The mean values were ranked based on the weight given by the respondents. The respondents first link organic products with environment, where most of them told it is environmental friendly, it is rich in nutrients when compared with conventionally grown food products and it is free from chemicals and pesticides.

Table - III
Logotype knowledge

Logos	*% of consumers*
	45
	13
	17
	4
	10

Some important logos which consumers often come across during their purchase of organic products, concerning to environment and certification were given to consumers in order to identify their knowledge on logos. From the above table, we can understand that 45% of consumers are knowledgeable on Indian organic certified logo. 13% of consumers are knowledgeable on euro organic certified logo. These are the organic products produced in Europe region. Only 4% of consumers hold knowledge on fair trade logo. Fair-trade certification is a product certification system claiming that products with its brand meet certain environmental, labour, and developmental standards.

Table – IV
T test and ANOVA table
T test and ANOVA result for the consumer's behavior towards organic food

Demographic variables	*f*	*p*
Gender	1.826	0.326
Age	0.276	0.926
Education	3.676	**0.012***
Occupation	0.571	**0.009***
Income	1.161	**0.000****

** Correlation is significant at the 0.01 level
* Correlation is significant at the 0.05 level

T test and ANOVA was performed to know whether demographic variables significantly influence buying behaviour of consumers. The results are given below.

The given table IV illustrates that there were significant differences in the education, Occupation and Income of respondents with respect to the buying behaviour towards organic food products with the value of (p=.012, .009and .000 which is <.05). This shows that there is a relationship between education, occupation and Income in the buying behaviour of consumers towards organic food products.

Consumer's willingness to pay premium for organic food

Willingness to pay (WTP) is the maximum amount an individual is willing to sacrifice to procure a good or avoid something undesirable. Consumers those who are concerned about the healthy food and those who are environmental friendly choose to have organic food and they are prepared to pay premium prices (Gracia A. et al, 2007). Regarding consumers' Willingness to pay premium price for organic products, study made by Hutchins and Greenhalgh (1997) revealed that almost half of the sample respondents were willing to pay more for organic foods, where the majority of them indicated they are ready to pay 10-20%. On the other hand, Gil et al. (2000) in Spain conclude only consumers who buy organics regularly were willing to pay a premium from 15% to 25% for organic food.

Table – V
Consumer's willingness to pay more for organic food

Willing to pay more	Percent of consumers
5%	24
10%	24
15%	10
20%	10
25%	8
30%	7

The given table describes about the consumers' willingness to pay premium for organic food products. The result shows that around 50% of consumers are ready to pay 5-10% premium where only 8% and 7% of consumers are ready to pay 25% and 30% premium respectively. It is clear that consumers can afford only 5-10% premium amount.

FINDINGS OF THE STUDY

- The numbers of organic consumers are increased significantly over the past decade as a result of health and environmental concern.
- From the sample surveyed it is found that most of the organic consumers surveyed are male and belongs to the age group of 21-30 followed by 31- 40 years. They mostly buy organic food from local and supermarkets.
- Consumers link the organic products with the environmental friendly production system and only few consumers have better knowledge on such products.
- Education, occupation and income have a relationship in the buying behavior of consumers.
- Most of the consumers are willing to pay only 5-10% premium amount in order to procure organic food.

CONCLUSION

It is concluded that more number of consumers started using organic food over the last few years as an output of increased level in health concern and the concern towards the environment. Though there is an increase in consumer's level, it is not all the consumers who buy organic on a regular basis. Therefore, it is essential to create proper awareness to all the consumers regarding the benefits of organic products and the gain they could get from the intake of such products regularly. Price is still the transcendent variable affecting any consumer's buying decision towards organic food.

REFERENCES

[1] Alvensleben, R. V. (1998). Ecological aspects of food demand: the case of organic food in Germany. *Institute for Agricultural Economics, University of Kiel*, *4*, 68-79.
[2] Alvensleben, R. V., & Altmann, M. (1986, August). Determinants of the demand for organic food in Germany (FR). In *IX Symposium on Horticultural Economics, XXII IHC 203* (pp. 235-242).
[3] Baltas, G. (2001). Nutrition labeling: issues and policies. European Journal of Marketing, Vol. 35 No. 5, pp. 708-21.
[4] Chinnici, G., D'Amico, M., & Pecorino, B. (2002). A multivariate statistical analysis on the consumers of organic products. *British Food Journal*, *104*(3/4/5), 187-199.
[5] Denver, S., Christensen, T. and Krarup, S. 2007. How vulnerable is organic consumption?
[6] Fotopoulos, C. and Krystallis, A. (2002), "Purchasing motives and profile of the Greek organic consumer: a countrywide survey", British Food Journal, Vol. 104 No. 9, pp. 730-65
[7] Gracia, A. and de Magistris, T. (2007), "Organic food product purchase behaviour: a pilot study for urban consumers in the South of Italy", Spanish Journal of Agricultural Research, Vol. 5 No. 4, pp. 439-51.

[8] Gracia, A. and de Magistris, T. (2007), "Organic food product purchase behaviour: a pilot study for urban consumers in the South of Italy", Spanish Journal of Agricultural Research, Vol. 5 No. 4, pp. 439-51.
[9] Hutchins, R.K. and Greenhalgh, L.A. (1997), "Organic confusion: sustaining competitive advantage", British Food Journal, Vol. 99 No. 9, pp. 336-8.
[10] Lea, E. and Worsley, T. (2005), "Australian's organic food beliefs, demographics and values", British Food Journal, Vol. 107 No. 11, pp. 855-69
[11] Lockie, S., Lyons, K., Lawrence, G. and Mummery, K. (2002), "Eating "green": motivations behind organic food consumption in Australia", Sociologia Ruralis, Vol. 42 No. 1, pp. 23-40.
[12] Magnusson, M., Arvola, A., Koivisto Hursti, U., Aberg, L. and Sjoden, P. (2001), "Attitudes towards organic foods among Swedish consumers", British Food Journal, Vol. 103 No. 3, pp. 209-26.
[13] Onyango, B. M., Hallman, W. K., & Bellows, A. C. (2007). Purchasing Organic food in US food systems. A study of attitudes and Practices. British Food Journal, 109, 399–411.
[14] Roddy, G., Cowan, C.A. and Hutchinson, G. (1996), ``Consumer attitudes and behaviour to organic foods in Ireland", Journal of International Consumer Marketing, Vol. 9 No. 2, pp. 41-63
[15] to information? Paper presented at Nordic Consumer Policy Research Conference towards a New Consumer? Towards a New Policy? Helsinki
[16] Transparency market research, Organic Food Market - Global Industry Size, Share, Trends, Analysis and Forecasts 2012 – 2018
[17] Tsakiridou, E., Boutsouki, C., Zotos, Y. and Mattas, K. (2007). Attitudes and behaviour towards organic products: an exploratory study. International Journal of Retail & Distribution Management 36 (2): 158 - 175.
[18] Wandel, M. & Bugge, A. (1997), "Environmental concern in consumer evaluation of food quality", Food Quality and Preference, Vol. 8 No. 1, pp. 19-26.
[19] Wier, M., Andersen, L.M. and Millock, K. (2003), "Consumer demand for organic foods – attitudes, values and purchasing", paper presented at SOM Workshop, Environment, Information and Consumer, Frederiksdal, April.
[20] Wilkins JL, Hillers VN. (1994). Influences of pesticide residue and environmental concerns on organic food preference among food cooperative members and non-members in Washington state. *Joumal of Nutrition Education* 26(1): 26-33.
[21] Yiridoe, E. K., Bonti-Ankomah, S., & Martin, R. C. (2005). Comparison of consumer perceptions and preference toward organic versus conventionally produced foods: a review and update of the literature. *Renewable Agriculture and Food Systems*, *20* (04), 193-205.
[22] Yue, C., Grebitus, C., Bruhn, M. and Jensen, H.H. 2008. "Potato marketing – factors affecting organic and conventional potato consumption patterns", paper presented at 12th Congress of the European Association of Agricultural Economists – EAAE, Ghent.

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